

REMARKS

This is intended as a full and complete response to the Office Action dated September 21, 2006, having a shortened statutory period for response set to expire on December 21, 2006. Please reconsider the claims pending in the application for reasons discussed below.

In the specification, some paragraphs have been amended to correct minor editorial problems.

Claims 1-20 are pending in the application. Claims 1-20 remain pending following entry of this response. Claims 1, 8, 10, 15, 16, and 20 have been amended. Applicants submit that the amendments do not introduce new matter.

Claim Objections

Claim 16 is objected to because of the following informalities:

The word "relation" should be changed to --relational-- at line 2 of the claim. Applicants have made the appropriate correction.

Specification Objections

The disclosure is objected to because of the following informalities:

The filing dates of the related applications have not been provided at par [0001] and par [0004], for example. Applicants have made the appropriate corrections.

Claim Rejections - 35 U.S.C. § 101

Claims 1-20 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Respectfully, Applicants traverse this rejection.

The Examiner states:

The basis of this rejection is set forth in a test of whether the invention is categorized as a process, machine, manufacture or composition of matter and if the invention produces a useful, concrete and tangible result. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) are found to be non-statutory subject matter. For a method claim to pass muster, the recited process must produce a useful, concrete and tangible result.

In the instant case, claims 1-9 recite methods but the methods claimed do not appear to produce a useful, concrete and tangible result.

For example, independent claim 1 concludes with storing structured data and ordinal values in one or more tables.

Office Action, p. 2-3. However, the Examiner's focus on the final step recited by claim 1 is misplaced. The correct focus is on the final result. "In determining whether the claim is for a "practical application," the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but rather that the final result is "useful, tangible and concrete." See Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, 70 Fed. Reg. 75451 (Interim Guidelines) (citing *State Street Bank v. Signature Financial*, 149 F.3d at 1374, 47 USPQ2d at 1602). Claim 1 clearly meets this threshold. Claim 1 recites a method for managing structured data having one or more repeating fields. The "final result" after the method is performed is that data from the repeating fields of a hierarchal data structure is readily accessible in the tables of a relational database. Specifically claim 1 recites a receiving step, a parsing step a generating step and a storing step. Compare these with the steps of the statutory claim in *State Street Bank v. Signature Financial*, 149 F.3d at 1374, 47 USPQ2d at 1602 ("the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing numbers, in and of itself, would not render it nonstatutory subject matter"). For the same reasons, claims 2-9 are directed to statutory subject matter.

Claim 10 is also directed to statutory subject matter because it produces a useful, concrete, and tangible result. Claim 10 is directed to a computer-readable medium containing an executable component for managing structured data having one or more repeating fields, which, when executed by a processor, performs operations comprising the method steps of claim 1. Under the Interim Guidelines, "functional descriptive

material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized." Because claim 10 recites functional steps, this claim is directed to statutory subject matter. Moreover, as demonstrated above, the method recited by claim 1 is itself directed to statutory subject matter under 35 U.S.C. § 101. For the same reasons, claims 11-14 are directed to statutory subject matter.

Claim 15 is also directed to statutory subject matter because it produces a useful, concrete, and tangible result. Claim 15 is directed to a system for managing structured data. The system includes the functional elements a set of template structures, a client component and a server component. These functional components interact with one another to perform the method recited by claim 1. As demonstrated above, the method recited by claim 1 is itself directed to statutory subject matter under 35 U.S.C. § 101. For the same reasons discussed above, claims 16-20 are directed to statutory subject matter.

For all the foregoing reasons, Applicants believe that claims 1-20 are directed to statutory subject matter and, therefore, respectfully request that this rejection be withdrawn.

Claim Rejections - 35 U.S.C. § 102

Claims 1-5 and 7-20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Chau et al.* (US 2002/0123993, hereinafter "*Chau*").

Applicants respectfully traverse this rejection. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The

elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

In this case, *Chau* does not disclose "each and every element as set forth in the claim." For example, *Chau* does not disclose a method for managing structured data having one or more repeating fields that includes a step of receiving a hierarchical data structure containing the structured data wherein the structured data is annotation data related to an annotated data object and wherein at least two instances of a repeating field are contained in the structured data. Claims 10 and 15 recite similar limitations. *Chau* describes a technique for creating metadata for fast search of XML documents stored as column data. See *Chau*, Abstract. The Examiner suggests that *Chau*, ¶¶ 0044, 0051, 0052, and 0195 discloses this limitation. Each of these paragraphs is addressed below.

First ¶¶ 0044, 0051, and 0052 provide a general description of the "XML Extender" product available from IBM. Set out in full, these paragraphs provide:

In one embodiment of the invention, the XML System comprises the XML Extender from International Business Machines, Corporation, of Armonk, N.Y. The XML System offers the capability of XML storage and data interchange. By storage, the XML System provides mechanisms for storing and retrieving XML documents in a relational database (e.g., DB2.RTM. from International Business Machines, Corporation) and searching the content of XML with high performance. By data interchange, the XML System provides a mapping between new and existing relational tables and XML formatted documents. Thus, the XML System allows customers to do e-business anywhere, enabling XML with Business to Business (B2B) and Business to Consumer (B2C) applications. For B2B applications, application data flows between database servers, via any network (e.g., the internet or an intranet), either directly without client interaction or indirectly via some client systems. For B2C applications, application data flows between a consumer at, for example, a workstation, and a server connected via a network (e.g., between database servers and web clients via the internet). Thus, the XML System supports Business to Business (B2B) and Business to Client (B2C) applications. ... FIG. 2 is a diagram illustrating a computer hardware environment that could be used in accordance with the present invention. In one embodiment, the DB2 XML Extender 200, a product from International Business Machines, Corporation, is at the center of the architecture. An

application program 202 and a document access definition (DAD) 204 are received by the DB2 XML Extender 200. The DB2 XML Extender 200 takes an XML document 206 as the input, stores the XML document 206 in DB2 210 (i.e., a relational database) either internally inside DB2 210 or externally on the file system as one or more XML files 208. Then, the stored XML document 206 can also be retrieved from DB2 210 or the file system through the DB2 Extender 200. The processing performed by the DB2 XML Extender 200 will be described in more detail below.

In another embodiment, an application program 202 and a document access definition (DAD) 204 are received by the DB2 XML Extender 200. The DB2 XML Extender 200 takes an XML document 206 as input, decomposes the XML document 206 into fragmented data and stores the fragmented data in DB2 210 (i.e., a relational database). Then, the fragmented data stored in DB2 210 can be regenerated from DB2 210 through the DB2 Extender 200. The processing performed by the DB2 XML Extender 200 will be described in more detail below.

Chau, ¶¶ 0044-0052. In short, these cited paragraphs describe the functionality of IBM's XML Extender product and IBM's DB2 database as including the ability to exchange data with one another. No where in this material, however, does *Chau* disclose a hierarchal data structure storing annotation data related to an annotated data object and wherein at least two instances of a repeating field are contained in the structured data. Instead, these paragraphs describe the interchange of data between two software applications available from IBM, and how the interchange may facilitate certain business activities, e.g., "Business to Business (B2B) and Business to Client (B2C) applications." Applicants submit that this extremely general description of data interchange between IBM's XML Extender and DB2 products does not disclose a step of receiving a hierarchical data structure containing the structured data wherein the structured data is annotation data related to an annotated data object and wherein at least two instances of a repeating field are contained in the structured data as part of a method a method for managing structured data having one or more repeating fields.

Based on this material, the Examiner asserts, without any supporting arguments that "XML document constitutes an annotated data object." *Office Action*, P. 6. Applicants respectfully disagree. An XML document is simply what it is, an XML document, a text-based collection of markup tags and attributes.

In support of the present rejection, the Examiner also cites to *Chau*, ¶ 0195. Generally, *Chau* discloses the use of an XML DAD (document access definition). "The DAD itself is an XML document. The DAD associates XML documents to a database through two major access and storage techniques by defining elements Xcolumn and Xcollection. Xcolumn defines how to store and retrieve entire XML documents as column data of the XML user defined type (UDT)." *Chau*, ¶¶ 76 and 122. In rejecting claim 1, the Examiner cites to aspects of a DTD (document type definition) provided for the DAD. As is known, a DTD describes the XML elements and attributes available for a given XML grammar, and a "valid:" XML document is an XML document that conforms to the rules of a given DTD. In the present rejection, the DTD for the DAD allows a DAD to include an "element_node" element, and that an "element_node" element may include a "comment node." In other words, a valid DAD may include the following XML structure.

```
<document root>
...
  <element node>
    <comment node> #PCDATA </comment node>
  <element node>
...
</document root>
```

Regarding these tags, the only additional description provided by *Chau* is in paragraph 195, which provides in full "comment_node: representing the comment for this element." Applicants submit the mere fact that an XML document composed against the DAD DTD may have an <element_node> tag and a <comment_node> sub-tag, fails to disclose a step of receiving a hierarchical data structure containing the structured data wherein the structured data is annotation data related to an annotated data object and wherein at least two instances of a repeating field are contained in the structured data as part of a method a method for managing structured data having one or more repeating fields.

For all the foregoing reasons, Applicants submit that claims 1, 10, and 15, along with the claims dependent therefrom, are patentable over *Chau*. Accordingly, withdrawal of this rejection is respectfully requested.

Claim Rejections - 35 U.S.C. § 103

Claims 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Chau* in view of *Mihai et al.* (US 2005/0065817, hereinafter "*Mihai*").

Claim 6 depends from one of claim 1 and is, therefore, believed to be allowable for the reasons provided above. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted, and
S-signed pursuant to 37 CFR 1.4,

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